

# इंटरनेट

# मानक

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“Step Out From the Old to the New”

IS 11719-2-1 (1986): Dimensions of mechanical structures of the 482.6 mm series, Part 2: Subracks and associated plug-in-units, Section 1: Subracks [LITD 3: Electromechanical COmponents and Mechnical Structures for Electronic Equipment]



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“Invent a New India Using Knowledge”



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Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”



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*Indian Standard***DIMENSIONS OF MECHANICAL STRUCTURES  
OF THE 482.6 mm SERIES****PART 2 SUBRACKS AND ASSOCIATED PLUG-IN UNITS****Section 1 Subracks**

**1. Scope** — Covers the basic dimensions of a modular range of subracks for mounting in equipment according to IS : 9606-1980 'Dimensions of panels and racks ( 482.6 mm system )'.

**1.1** The drawings given in this standard are not intended to indicate details of design.

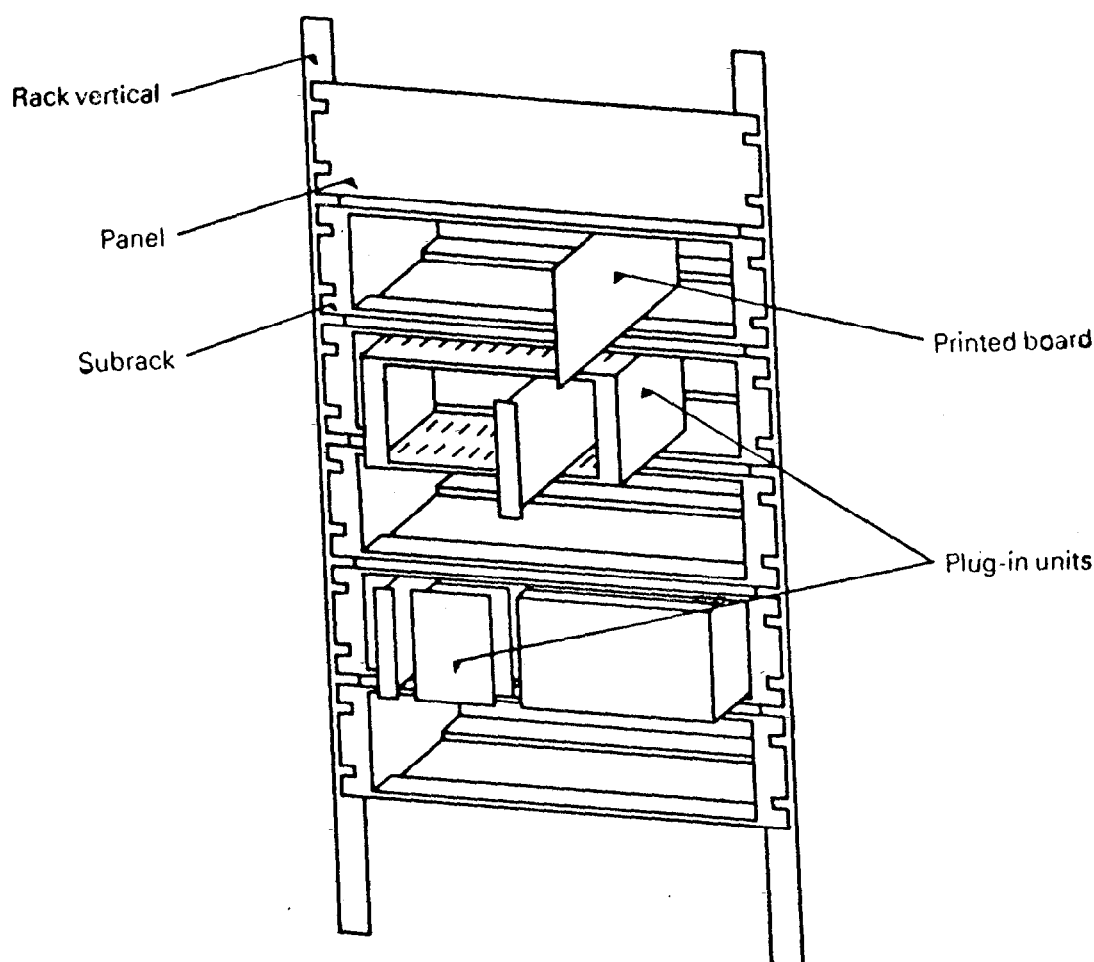
**2. General Arrangement** — The subracks may be mounted, one above another or in combination with suitable instruments and panels ( which also conform to the panel dimensions and equipment complying with the rack dimensions given in IS : 9606-1980 ).

**2.1** General arrangement of rack, subracks, printed board and plug-in unit is given in Fig. 1. The following notes are to be read with Fig. 1.

**Note 1** — General subracks are equipped with printed board or rack and panel type connectors at the rear side, and have guides for locating and/or supporting printed boards or types of plug-in units.

**Note 2** — In principle components are mounted on the right-hand side of the printed board as viewed from the front of the subrack.

**Note 3** — Clause 4 and Appendix A of Section 2 of this standard ( Part 2 ) define the dimensions required for mechanical interchangeability of plug-in units.



**FIG. 1 GENERAL ARRANGEMENT**

**3. Subrack Description** — For the purpose of this standard a typical subrack comprises horizontal members, secured between two side plates as shown in Fig. 2. The side plates have right-angled flanges equivalent to the extremities of the panels shown in IS : 9606-1980.

**4. Subrack Basic Dimensions** — Subrack basic dimensions are given in Fig. 2. The following notes and Table 1 are to be read with Fig. 2.

**Note 1** —  $81 \times 5.08$  ( mm ) is permissible for case mounting or for use with telescopic slides.

**Note 2** — In designing to this dimension, it should be noted that the distance between rack uprights specified in IS : 9606-1980 is 450 mm minimum. Earlier racks could have an aperture of 447 mm minimum as specified in IS : 9606-1980.

**Note 3** — Clearance for PB coding, ejectors, etc.

**Note 4** — The guidance dimension  $H_g$  shall be derived from the printed board height  $H_b$  according to 3 of IS : 11719 ( Part 2/Sec 2 )-1986 'Dimensions of mechanical structures of the 482.6 mm series: Part 2 Subracks and associated plug-in units, Section 2 Plug-in units'. Adequate engagement and interchangeability shall be maintained between plug-in units and guide rails.

**Note 5** — The position of the centreline of the first printed board will depend on the connector chosen. The preferred dimensions of  $A$  is 3.27 mm unless found to be impracticable.

**Note 6** — Side plates may be extended by 60 mm beyond the rear attachment plane. The rear edge of a non-extended side plate need not coincide with the rear attachment plane.

**Note 7** —  $D_c$  and  $C$  dimensions and tolerances are dependent on the chosen connector [ see 4 of IS : 11719 ( Part 2/Sec 2 )-1986 ].

**Note 8** — The detail shown in item Z for recessed panels is preferred for future designs. Item Y shown in Fig. 1 of IS : 11719 ( Part 2/Sec 2 )-1986 should be considered when designing the horizontal members.

**Note 9** — The range of four depths stated are those which are preferred. If necessary manufacturers can increase the depth in increments of 60 mm.  $D_s$  is a preferred dimension for the depth of subracks when subracks are supplied without mounting brackets for PB-connectors.

**Note 10** — The manufacturers of subracks shall define the fastening dimensions and tolerances so that they are compatible with the dimensions of the plug-in units given in Fig. 1 and 2 of IS : 11719 ( Part 2/Sec 2 )-1986 such that interchangeability is guaranteed.

**Note 11** — The width of the guide slot shall accommodate a  $1.6 \pm 0.2$  mm thick printed board in accordance with IS : 5921 ( Part 1 )-1970 'Specification for metal-clad base material for printed circuits for use in electronic and telecommunication equipment: Part 1 General requirements and tests ( first revision )'.

**Note 12** — The symbol  $U$  means a vertical increment of 44.45 mm. Tolerances are non-cumulative.

**Note 13** — Actual outside dimensions and slot details are given in IS : 9606-1980.

TABLE 1 SUBRACK BASIC DIMENSIONS

All dimensions in millimetres.

$n \times U$ ( See Note 12 )	2U	3U	4U	5U	6U	7U	8U	9U	10U	11U	12U
$H_s$ minimum	67.55	112.00	156.45	200.90	245.35	289.80	334.25	378.70	423.15	467.60	512.05
$F \pm 0.20$	78.05	122.5	166.95	211.40	255.85	300.30	344.75	389.20	433.65	478.10	522.55
1	112.24										
$D_s \pm 0.5$	172.24										
( See Note 9 )	232.24										
4	292.24										

## EXPLANATORY NOTE

This standard ( Part 2 ) is based, without any technical change, on IEC Pub 297-3 ( 1984 ) 'Dimensions of mechanical structures of the 482.6 mm ( 19 in ) series: Part 3 Subracks and associated plug-in units', issued by the International Electrotechnical Commission.

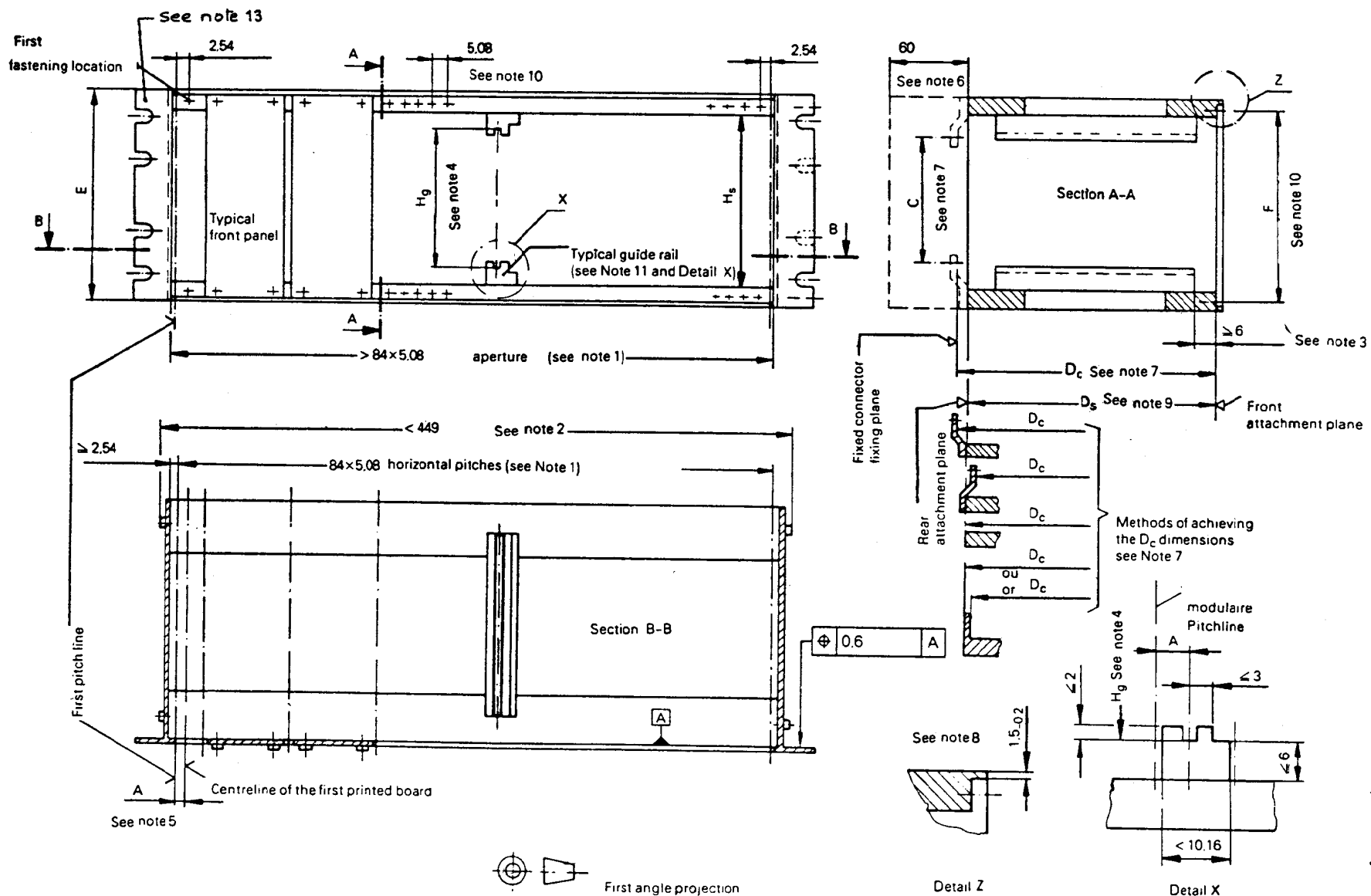


FIG. 2 SUBRACK BASIC DIMENSIONS